



United States Department of the Interior

IN REPLY REFER TO

4510
(U-058)

BUREAU OF LAND MANAGEMENT
Sevier River Resource Area
PO Box 705
Richfield, Utah 84701

STAFF REPORT

TITLE: T&E Plant Discussion and Clearance
Plan of Operations for Gypsum Quarrying, UT-056-2P

DATE: March 26, 1981

AUTHOR: Larry R. Greenwood, Wildlife Biologist

On March 24 and 25, 1981 I surveyed the mining claim areas included in the Gypsum Quarrying Plan of Operations, for the presence of Utah rare plants. The term "Rare" is used instead of "Threatened" or "Endangered" because none of the plants in the Mountain Valley Planning Area are officially listed in the Federal Register at the present time. Therefore they are not presently protected by the Endangered Species Act which has the two categories of "Threatened" and "Endangered". They are, however, protected through BLM policy.

The field survey yielded a very complex rare plant situation for the mining claim areas. Because of this complexity I am deviating slightly from the standard T&E plant clearance format.

The plan of operations is divided up into four groups of mining claims. A separate discussion and clearance will be made for each of these groups.

Larry R. Greenwood
Larry R. Greenwood

ENDANGERED, THREATENED & SENSITIVE PLANT CLEARANCE

Survey | Report

DATE 3-24-81 3-26-81 EXAMINER Larry R. Greenwood, Wildlife BiologistPROJECT NAME Gypsum Quarrying, UT-056-2PGabus Claims - 1,2,3,4PROJECT LOCATION Lost Creek DrainageT. 22 S., R. 1 W., SW $\frac{1}{4}$ Sec. 13 and NW $\frac{1}{4}$, Sec. 24See attached map for exact locations.RESOURCE AREA SRRA COUNTY SevierGRAZING ALLOTMENT Chicken CoopELEVATION 5360 ft. to 5720 ft. GEOLOGY 1) Arapien shale formation2) Quaternary Recent Alluviumderived from surroundingArapien hills.SWA# N/A VEGETATIVE TYPE(S) 1) Cliffrose-Horsebrush2) Shadscale-Blacksagebrush

ASSOC. PLANTS 1) Juniperus osteosperma, Cercocarpus montanus, Ephedra nevadensis,
Atriplex confertifolia, Tetradymia glabrata, Eurotia lanata, Chrysothamnus
depressus, Chrysothamnus viscidiflorus, Leptodactylon pungens, Oryzopsis
hymenoides, Cryptantha confertiflora, Eriogonum spathulatum, Malcolmia
africana, Stanleya pinnata.

2) Chrysothamnus nauseosus, Ephedra nevadensis, Xanthocephalum sarothrae,
Oryzopsis hymenoides, Sitanion hystrix, Malcolmia africana, Ranunculus
testiculatus, Halogeton glomeratus, Salsola kali, Phlox longifolia,
Bromus tectorum, Chorisporea tenella, Cymopterus purpurascens, Sphaeralcea
coccinea, Cryptantha humilis.

DESCRIPTION OF FIELD WORK The area was intensively surveyed by walking.

REFERENCE SOURCES

1. Welsh, S.L. 1978. Endangered and Threatened Plants of Utah: A Reevaluation. Great Basin Naturalist 38 (1) : 1-18.
2. Greenwood, L.R. 1980. Endangered, Threatened or Sensitive Plant List :- Richfield District.
3. Endangered, Threatened or Sensitive Plant photograph collection - Sevier River Resource Area - Photos verified by Dr. Welsh of BYU.
4. Endangered, Threatened or Sensitive plant location and habitat data summary for the Richfield District - Data taken from mounted specimens contained in the BYU Herbarium; computer printout for the BYU Herbarium; and plants collected by L. Greenwood and subsequently verified by Dr. Welsh.
5. Endangered, Threatened and Sensitive Plant location overlay for the Sevier River Resource Area.
6. SRRA Herbarium - Endangered, Threatened and Sensitive Plant collection for the Sevier River Resource Area. All specimens verified by S.L. Welsh of BYU.

GENERAL COMMENTS _____

Threatened, Endangered or Sensitive Plants YES x NO _____

(List if Yes) Cymopterus coulteri, Mentzelia argillosa, Phacelia utahensis,
Townsendia aprica.

*PLANTS COLLECTED ON SITE 1) Townsendia aprica-flowering
2) Cymopterus coulteri-flowering

*PLANTS OBSERVED ON SITE See discussion on pages 3 and 4.

RECOMMENDATION Do not allow gypsum mining activities to occur on Gabus Claim #1.
Townsendia aprica occurs on this claim and protection of this extremely
rare plant is desired (see additional discussion below).

Allow gypsum mining activities to occur on Gabus Claims 2,3,and 4.
(see discussion below concerning rare plants).

Disturbed areas should be drill seeded with the following mixture:

<u>Indian ricegrass (<i>Oryzopsis hymenoides</i>)</u>	<u>31b/ac</u>
<u>Western wheatgrass (<i>Agropyron smithii</i>)</u>	<u>3</u>
<u>Winterfat (<i>Eurotia lanata</i>)</u>	<u>3</u>
<u>Birchleaf Mtn. Mahogany (<i>Cercocarpus montanus</i>)</u>	<u>3</u>
<u>TOTAL</u>	<u>121b/ac</u>

* Plant Abundance (a - abundant)
(c - common)
(i - infrequent)

DISCUSSION:

Gabus Claim #1 has populations of two Utah rare plants on it:

Townsendia aprica and Cymopterus coulteri. T. aprica is on Utahs highest priority list for being federally listed as Endangered. It will definitely be listed in the future. Gypsum mining is this plants major threat since it only occurs on the Arapien Shale Formation in the Mountain Valley Planning Area (MVPA). It is important to note that this population of T. aprica (Gabus Claim #1) is one of the two known BLM colonies in MVPA. Both of these colonies are on gypsum mining claims. One other known population occurs on private land which is presently being quarried for gypsum.

The population of Cymopterus coulteri, which occurs in Gabus Claim #1, is not a major concern with regards to the mining activities. Loss of this population would only minimally impact the species as a whole, since several large populations, as well as numerous small colonies, occur on BLM land within the MVPA. Also, none of these populations and colonies are presently threatened by any activity. However, since C. coulteri occurs with T. aprica on claim #1, then it will also be protected through the no activity recommendation.

Gabus claims 2,3, and 4 all contain small, localized colonies of Mentzelia argillosa and Phacelia utahensis, which are both Utah rare plants that are endemic to the Arapien Shale Formation. With regards to future Federal listing, both of these plants are currently on the medium priority list for Utah. Gypsum mining activities are the main threat to both of these species. However, this is not a major concern because of the following reasons:

- 1) Current information and data indicates that both of these plant species occur as small, localized colonies throughout the Arapien Shale Formation. This formation is approximately 45 miles long, stretching from Glenwood on the south to Ephraim on the north.
- 2) Both plants appear to be somewhat tolerant of gypsum mining activities. Phacelia utahensis is an annual species which produces 4 seeds per flower. Each plant has numerous flowers and so the end result is production of a large quantity of viable seed. This fact helps the plant reestablish itself on disturbed shale areas. The success of reestablishment depends on many factors, especially the degree of disturbance. Minimal documentation of this mining activity tolerance has been made. Mentzelia argillosa has also been documented as having the capability to reestablish itself on gypsum mined areas. In several instances mature, healthy plants have been observed growing on disturbed sites: old burms and bulldozer trails. Again many factors govern the degree of reestablishment success.

Larry R. Greenwood

T 225

Funnel

BM-5334

1 Dam



ENDANGERED, THREATENED & SENSITIVE PLANT CLEARANCE

Survey | Report

DATE 3-25-81 | 3-27-81 EXAMINER Larry R. Greenwood, Wildlife BiologistPROJECT NAME Gypsum Quarrying, UT-056-2PWestern Claims - 31, 41, 42, 46PROJECT LOCATION T. 23 S., R. 1 W., SW $\frac{1}{4}$ Sec. 7See attached map for exact locationRESOURCE AREA SRRA COUNTY SevierGRAZING ALLOTMENT GypsumELEVATION 5640 to 5920 ft. GEOLOGY Arapien Shale FormationSWA# N/A VEGETATIVE TYPE(S) 1) Black sagebrush - Shadscale2) Shrub community dominated by cliff-
rose and birchleaf Mtn. Mahogany

ASSOC. PLANTS 1) Juniperus osteosperma, Oryzopsis hymenoides, Bromus tectorum, Stipa comata, Poa secunda, Sitanion hystrix, Chrysothamnus nauseosus, Chrysothamnus vicidiflorus, Artemisia tridentata, Artemisia spinescens, Cryptantha humilis, Lappula occidentalis, Senecio multilobatus, Malcolmia africana, Oenothera caespitosa, Arabis perennans, Caulanthus crassicaulus, Cymopterus purpurascens.

2) Eurotia lanata, Tetradymia glabrata, Ephedra nevadensis, Chrysothamnus depressus, Phlox austromontana, Haplopappus acaulis, Penstemon confusus, Brickelia oblongifolia, Cymopterus rosea, Stanleya pinnata, Halogeton glomeratus.

RECOMMENDATION Allow gypsum mining activities to occur on Western claims 31, 41, 42, 46.

Although 3 species of Utah rare plants do occur on these claims, it has been professionally determined that loss of these plant populations, if it occurs, would very minimally impact the species as a whole. It should be noted that total devastation of the claims would have to occur, in order to destroy the rare plant populations. This is unlikely to happen due to the present system of mining only the high grade gypsum, which is localized and not spread over the entire formation evenly.

For further rationale and discussion refer to pages 3 and 4 on the Gabus Claims 1,2,3,4 clearance. Also the disturbed areas should be drill seeded with the mixture recommended on page 3 of the Gabus Claim report.

* Plant Abundance (a - abundant)
(c - common)
(i - infrequent)

Larry R. Greenwood

ENDANGERED, THREATENED & SENSITIVE PLANT CLEARANCE

Survey | Report

DATE 3/25/81 | 3/27/81 EXAMINER Larry R. Greenwood, Wildlife BiologistPROJECT NAME Gypsum Quarrying, UT-056-2PWestern Claims 14,15,16,17,18,19,20,21PROJECT LOCATION T. 23 S., R. 1 W., E $\frac{1}{2}$, Sec. 5See attached map for exact location.RESOURCE AREA SRRA COUNTY SevierGRAZING ALLOTMENT GypsumELEVATION 5560 ft to 6000 ft. GEOLOGY Arapien Shale FormationSWA# N/A VEGETATIVE TYPE(S) Refer to clearance reports for Gabus
Claims (1,2,3,4) and Western Claims
(31,41,42,46)ASSOC. PLANTS Refer to clearance reports for Gabus Claims (1,2,3,4) and Western
Claims (31, 41, 42, 46).

DESCRIPTION OF FIELD WORK The area was surveyed by a combination of walking the
Arapien Hills and driving existing mining roads.

REFERENCE SOURCES

1. Welsh, S.L. 1978. Endangered and Threatened Plants of Utah: A Reevaluation. Great Basin Naturalist 38 (1) : 1-18.
2. Greenwood, L.R. 1980. Endangered, Threatened or Sensitive Plant List:- Richfield District.
3. Endangered, Threatened or Sensitive Plant photograph collection - Sevier River Resource Area - Photos verified by Dr. Welsh of BYU.
4. Endangered, Threatened or Sensitive plant location and habitat data summary for the Richfield District - Data taken from mounted specimens contained in the BYU Herbarium; computer printout for the BYU Herbarium; and plants collected by L. Greenwood and subsequently verified by Dr. Welsh.
5. Endangered, Threatened and Sensitive Plant location overlay for the Sevier River Resource Area.
6. SRRA Herbarium - Endangered, Threatened and Sensitive Plant collection for the Sevier River Resource Area. All specimens verified by S.L. Welsh of BYU.

GENERAL COMMENTS A significant amount of mining has already occurred on this area.

Threatened, Endangered or Sensitive Plants YES X NO

(List if Yes) Townsendia aprica - Last chance Townsendia

Mentzelia argillosa - Clay blazing-star

Phacelia utahensis - Utah phacelia

*PLANTS COLLECTED ON SITE 1) *Townsendia aprica* - pre flowering

*PLANTS OBSERVED ON SITE

RECOMMENDATION Allow gypsum mining activities to occur on Western Claims 14,15,16
17,18,19,20,21 with the following stipulation:
The populations of Townsendia aprica which occur on claims 15 and 17,
will not be destroyed through mining. Both populations are small and
localized and can easily be avoided. Before additional mining activity
can take place on these claims, BLM will be consulted and a field
inspection, to delineate and thus protect these populations, will be
made.

Larry R. Greenwood

* Plant Abundance (a - abundant)
(c - common)
(i - infrequent)

DISCUSSION:

The Western Claims 15 and 17 each contain a small population of Townsendia aprica. Both of these colonies are new locations which were previously unknown before this clearance was made. At the present time loss of these populations would adversely affect the species as a whole on BLM land. To date, T. aprica is a very rare, localized, endemic plant of Sevier County, which warrants protection.

Both Mentzelia argillosa and Phacelia utahensis occur as small localized colonies on the Western Claims (14-21). The specialist recommendation is not to exclude gypsum quarrying because of the presence of these rare plants. Refer to clearance reports on Gabus Claims (1,2,3,4) and Western Claims (31,41,42,46) for rationale and discussion.

ENDANGERED, THREATENED & SENSITIVE PLANT CLEARANCE

Survey | Report

DATE 3-25-81 | 3-27-81 EXAMINER Larry R. Greenwood, Wildlife BiologistPROJECT NAME Gypsum Quarrying, UT-056-2PKings Meadow Claims 5,6,7,8,10,11,12,15PROJECT LOCATION T. 23 S., R. 1 W., S $\frac{1}{2}$ Sec. 8See attached map for exact location.RESOURCE AREA SRRA COUNTY SevierGRAZING ALLOTMENT GypsumELEVATION 5600 ft. to 6150 ft. GEOLOGY Arapien Shale FormationSWA# N/A VEGETATIVE TYPE(S) Refer to clearance reports forGabus claims (1,2,3,4) andWestern Claims (31,41,42,46).ASSOC. PLANTS Refer to clearance reports for Gabus Claims (1,2,3,4) and Western
Claims (31,41,42,46).

DESCRIPTION OF FIELD WORK The area was surveyed by driving existing mining roads
and by walking the Arapien Hills.

REFERENCE SOURCES

1. Welsh, S.L. 1978. Endangered and Threatened Plants of Utah: A Reevaluation. Great Basin Naturalist 38 (1) : 1-18.
2. Greenwood, L.R. 1980. Endangered, Threatened or Sensitive Plant List:- Richfield District.
3. Endangered, Threatened or Sensitive Plant photograph collection - Sevier River Resource Area - Photos verified by Dr. Welsh of BYU.
4. Endangered, Threatened or Sensitive plant location and habitat data summary for the Richfield District - Data taken from mounted specimens contained in the BYU Herbarium; computer printout for the BYU Herbarium; and plants collected by L. Greenwood and subsequently verified by Dr. Welsh.
5. Endangered, Threatened and Sensitive Plant location overlay for the Sevier River Resource Area.
6. SRRA Herbarium - Endangered, Threatened and Sensitive Plant collection for the Sevier River Resource Area. All specimens verified by S.L. Welsh of BYU.

GENERAL COMMENTS Evidence of *Phacelia utahensis* tolerance towards gypsum mining
was documented.

Threatened, Endangered or Sensitive Plants YES ☒ NO ☐

(List if Yes) Mentzelia argillosa - Clay blazing star

Phacelia utahensis - Utah phacelia

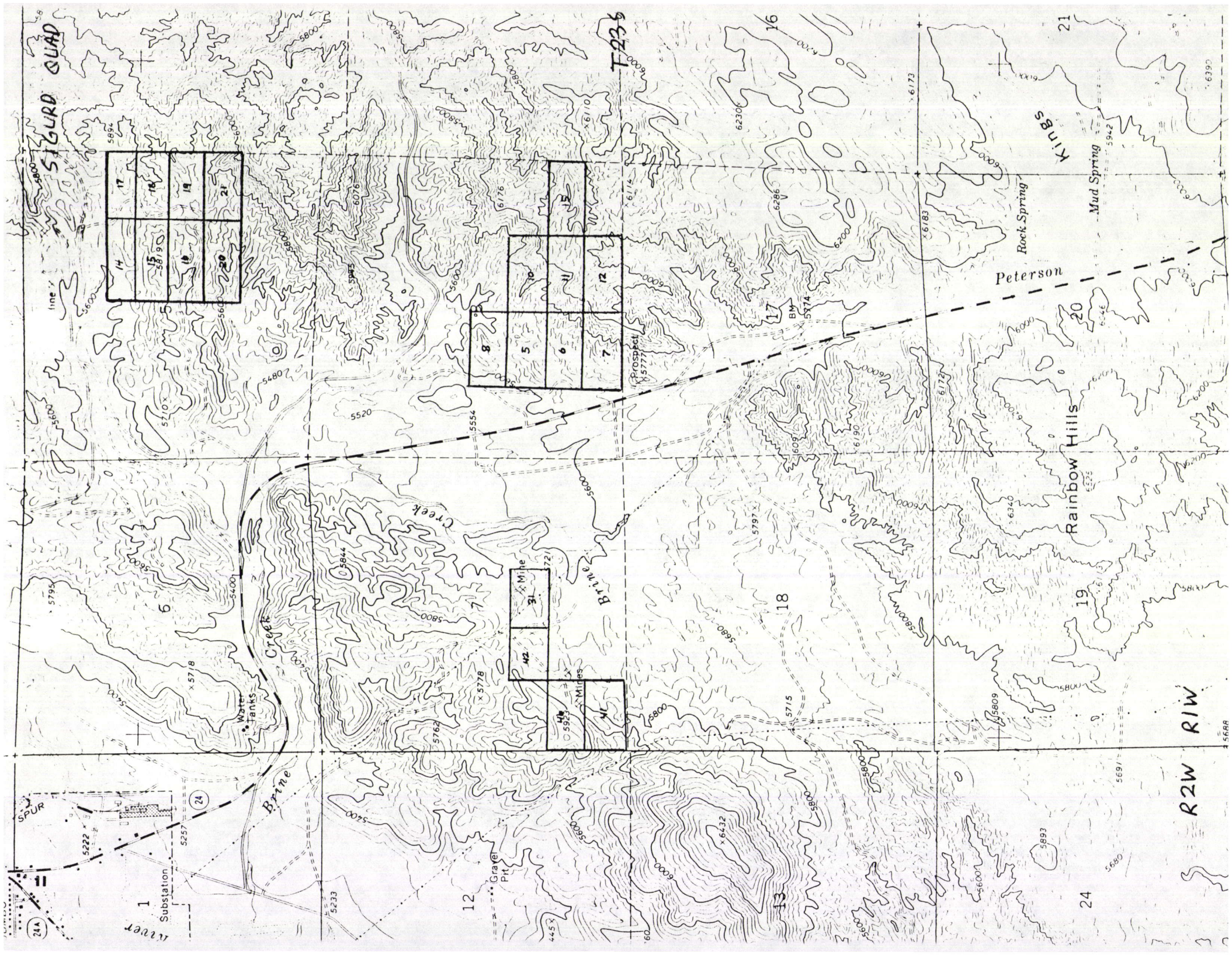
*PLANTS COLLECTED ON SITE

*PLANTS OBSERVED ON SITE

RECOMMENDATION Allow gypsum mining activities to occur on Kings Meadow Claims 5,6,7,
8,10,11,12,15. It has been professionally determined that loss of
the rare plant populations, if it occurs, would very minimally
impact the species as a whole. (see preceding clearance reports for
additional rationale and discussion).

Larry R. Greenwood

* Plant Abundance (a - abundant)
(c - common)
(i - infrequent)





United States Department of the Interior

BUREAU OF LAND MANAGEMENT

RICHFIELD DISTRICT OFFICE
150 East 900 North
Richfield, Utah 84701

IN REPLY REFER TO

8111
(U-052)

STAFF REPORT

Title: Cultural Resources Survey Clearance Report - Georgia-Pacific
Plan of Operation

Date: March 25, 1981

Author: Marian Revitte

1. Date of Field Operations: March 19, 1981
2. Archaeologist: Marian Revitte
3. Project: This is a plan of operations submitted by Georgia-Pacific for gypsum mining.
4. County: Sevier
5. BLM District Office: Richfield District
Resource Area: Sevier River Resource Area
6. Legal Description: T. 22 S., R. 1 E., Sec. 13, 24.
T. 23 S., R. 1 W., Sec. 5, 8, 7.
7. Map Reference: Sigurd 7-1/2" 1966 Salina 7-1/2" 1966
8. Consultation/Existing Data Review: After reviewing current BLM maps and records, and after consulting the National Register of Historic Places, there are no National Register properties or nominees in the project area. There are two (2) sites recorded outside of the mining claims 1, 2, 3, and 4 in T. 22 S., R. 1 W., Sec. 14 along Lost Creek. These were recorded by BYU during the survey done in 1976 for the UP&L Sigurd to Emery power line. These sites should not be affected by mining activities taking place on the claims.
9. Project Description: These are a series of mining claims that Georgia-Pacific plans to mine over the next few years.

10. Area and Environmental Setting:

Soil:

The soil is Arapien Shale.

Vegetation:

Vegetation consists of two communities. One, on the flats and along the wash, is a shadscale - blackbrush. The other one on the Arapien Shale, is a shrub community dominated by mountain mahogany, cliffrose, and horsebrush.

Fauna:

Fauna consists of raptors, reptiles, and rodents.

Hydrology:

Permanent water is supplied by Lost Creek and other small drainages in the area.

11. Field Examination Techniques:

Most of the area is Arapien Shale which is highly eroded and in very poor condition. This area has a very low potential for sites. Only a Class I Inventory was done on these areas. An intensive survey was done on those areas that had potential such as along washes and on the more stabilized areas.

12. Findings:

No cultural resources were recorded or identified in the project area. Two sites (42 SV 917) and (42 SV 918) were recorded about 1/2 mile to the northwest of claims 1,2,3, and 4 in T. 22 S., R. 1 W., Sec.14. Both of these sites are lithic scatters along Lost Creek. One of these, 42 SV 918 is thought to have possible depth and/or a structure associated with it.

13. Anticipated Impacts:

No direct impacts are anticipated on any cultural resources in the area. To avoid indirect impacts to the sites in the vicinity, emphasis should be placed on the stipulation that personnel working in the area should not disturb or collect cultural resources.

14. Recommendations:

Recommend the project be done. I would recommend emphasizing stipulation #2.

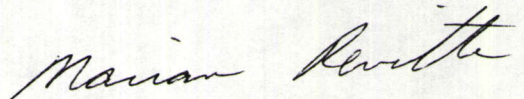
- 1) All vehicle traffic will be confined to the mining claims.

- 2) Personnel will refrain from collecting artifacts and otherwise disturbing cultural resources in the vicinity.
- 3) Should subsurface cultural resources be discovered during any surface disturbing activities, operations will cease and the District Manager notified immediately. The cultural resource(s) will expeditiously be evaluated and mitigation measures, commensurate with the site's value and impact, instituted.
- 4) Should it be necessary to deviate from the mining claims, a cultural resource investigation will be conducted prior to surface disturbance.

15. Inventoried Acres:

40 acres intensively inventoried.

MRevitte:nhw:3-27-81

A handwritten signature in cursive script, reading "Marian Revitte". The signature is written in dark ink and is positioned to the right of the typed name "Marian Revitte".

BLM Report ID No. 1 2 3 4 5 6 7 8 9 10

Report Acceptable Yes ☐ No ☐

Mitigation Acceptable Yes ☐ No ☐

Comments:

Development Company

4. Antiquities Permit No.

Fieldwork Location: TWN

62	2	2	S	65
----	---	---	---	----

 Range

66	1	W	69
----	---	---	----

 Section(s)

70	71	72	73	74	75	76	77
----	----	----	----	----	----	----	----

TWN

78	2	3	S	81
----	---	---	---	----

 Range

82	1	W	85
----	---	---	----

 Section(s)

86	87	88	89	90	91	92	93
----	----	----	----	----	----	----	----

Resource Area

110	111
-----	-----

 TWN

94				97
----	--	--	--	----

 Range

98			101
----	--	--	-----

 Section(s)

102	103	104	105	106	107	108	109
-----	-----	-----	-----	-----	-----	-----	-----

Fill in spaces 65, 69, 81, 85, 97, 101 Only if
V=Vernal Meridian
H=Half Township

Most of the area was highly eroded Arapien Shale with low potential for sites. A Class I literature review was done on these areas. An intensive inventory was done in an area of medium potential along washes and drainages.

10. Inventory Type I + Literature Search

R= Reconnaissance
I= Intensive
S= Statistical Sample

(*A parcel hard to cadastrally locate i.e., center of section)

12. Number Sites Found:

--	--	--	--	--

No sites = 0

131				13
-----	--	--	--	----

No cultural resources were recorded or identified in the project area. Two sites, 42 SV 917 and 42 SV 918, were recorded north-west of claims 1, 2, 3, and 4 along Lost Creek in T. 22 S., R. 1 W., Sec. 14. They are recorded as lithic scatters. Site 42 SV 918 is thought to have possible depth and/or structures associated with it.

4. Actual/Potential National Register Properties Affected:

No actual or potential National Register properties should be affected by the project.

5. Conclusion/Recommendations:

Recommend the project be done to avoid indirect impacts to the sites in the vicinity. Emphasis should be placed on the fact that personnel working in the area should refrain from collecting or disturbing cultural resources.

6. Signature and Title of Institutional Officer Responsible:

Richard L. ...
District Archaeologist

Note: Include only requested information in numbered spaces.